Proposal No. 462

SHELL CHEMICAL CORPORATION - TORRANCE PLANT

REQUEST FOR EXPENDITURE

4900 C
8500 total

TITLE: REVISION OF CONCENTRATED BRINE STORAGE - COPOLYMER

Originator (1) and Date J.L.Waddell 5/10/60 | Priority Rating 2 | Desired Completion Date 8-1-60

	APPROVAL OF PROPOSAL	APPROVAL	DATE
WHP	Originating Department Manager		
	Supervising Department Manager (2)	WHP	5/10/60
	APPROVAL FOR ESTIMATE:		
RMS	Assistant Superintendent (3)	RMS	5/13/60
-------	Superintendent		
WLH	Technological	WLH	5/18/60
	APPROVAL OF ESTIMATE:		
JL	Engineering	JL	9-21-60
JLW	Originator (1)	JLW	6-6-60
WHP	Supervising Department Manager	WHP	6-24-60
RMS	Assistant Superintendent	RMS	7/21/60 9/23/60
WLH	Technological	WLH	9/26/60
ESM	Superintendent	ESM	
	APPROVAL:		
GSW	Plant Manager	GSW	9/30/60
JDM	Treasury	JDM	12/5/60

TORRANCE
SJ-0013192

Budget Reference (4) NONE

Job Engineer D. R. HAYES Job Estimate No. 60-85 R

(1) Routing to be determined by originator (fill in names when necessary and cross out nonapplicable routing).
(2) Initials of Department Manager in charge of facilities to which changes or additions are proposed.
(3) Route to: (a) Applicable Assistant Superintendent-Operations if facilities to be installed in Operations or Shipping, (b) Superintendent if for other plant departments or Research.
(4) For Capital items only--if not included in budget, show "NONE".

Budg. by T602-7 a/c 88
6401 $4900
292 2,200
9678 1,400

TMU-288 12-20-57 ESM:nd (2)

MEMORANDUM OF JUSTIFICATION
AFE NO.
REVISION OF CONCENTRATED BRINE
STORAGE - COPOLYMER

SUMMARY

It is proposed to install an 8,000-gallon wooden concentrated brine storage tank and associated valves, instruments, and piping in the 4900 area. This will allow retirement of the present three concentrated brine storage tanks (T-3011, T-3051 and T-4007) in the A-2 and A-3 buildings. Reference is made to the attached inspection reports dated March 1, and September 6, 1960, which indicate that within six months these tanks will require replacement or extensive repairs.

It is estimated that these facilities will cost $8,500 and can be installed by plant and contract forces within 14 weeks after approval of this proposal.

PRESENT FACILITIES

Concentrated brine is presently supplied to the A buildings from the 4900 area via a four-inch pipeline. During normal operation of the A buildings, dilute brine is made up from concentrated brine taken directly from the pipeline. In the case of equipment failure in the 4900 area which precludes normal brine delivery to the A buildings, dilute brine is made up from concentrated brine stored in the three 2,500-gallon tanks (T-3001, T-3051 and T-4007) located in the A-2 and A-3 buildings, respectively. These three tanks contain a supply sufficient for an 18 line-hour run of brown rubber production.

PROPOSED FACILITIES

It is proposed to install an 8,000-gallon concentrated brine storage tank with associated valves, instruments, and piping in the 4900 area which will replace T-4007, T-3011 and T-3051 and associated piping, valves, and four pumps in the A buildings. The tank is to be constructed of wood. Reference is made to the attached flow sheet which indicates present concentrated brine equipment alignment and proposed tie-ins for the new tank. Past history indicates that essentially no lost time has resulted due to failure or plugging of the concentrated brine pipeline between the 4900 area and the A buildings. Therefore, brine storage in the 4900 area should present no new operational problems. An 8,000-gallon brine storage tank will supply 20 line hours of brown rubber production.

The proposed instrumentation includes a level indicator for the storage tank so the operating personnel may readily determine the tank level and a low pressure alarm on the discharge of existing pumps P-4904 and P-4905 to warn of any curtailment in brine supply to the A buildings. Alarm horns would be located in the 4900 building and the J-2 control house. A horn is necessary in J-2 because operators are on duty in the 4900 building on day shift only.

ALTERNATIVES

The only alternative considered was replacement of the existing tanks. Replacement of the three smaller storage tanks in the present location is not desirable because of the housekeeping problem associated with them. Also, it has been estimated that replacement of the three present tanks and associated equipment affected by this replacement would cost $15,600. Repairs to the tanks would involve essentially the same cost as their complete replacement.

JUSTIFICATION

In light of the attached inspection reports which recommend major repair or replacement of the present tanks, it is advantageous at this time to provide a centralized storage tank for concentrated brine which will provide additional assurance of adequate brine during downtime in the 4900 area, and also remove the disagreeable housekeeping problem which presently exists around the brine storage tanks. Further, central storage in the 4900 area simplifies operation and maintenance of the system since four brine pumps in the A buildings can be eliminated.

CONSTRUCTION SCHEDULE

Installation of these facilities will be completed by plant and contract forces within 14 weeks after approval.

JLW/ela
9/23/60

SHELL CHEMICAL COMPANY
A Division of Shell Oil Company

TORRANCE PLANT

ESTIMATED COST SUMMARY

ESTIMATE SUMMARY OF Revision of Concentrated Brine Storage

Job Estimate No. 60-85R
AFE No.

MADE BY D. R. Hayes (Job Engineer) 9/21/60 (Date) APPROVED BY (Chief Engineer) 9/21/60 (Date)

Item	Material	Labor	Sub Total	TOTAL
MAJOR EQUIPMENT				
Columns				
Vessels				
Exchangers				
Pumps	---	700	700	
Compressors				
Furnaces				
Tanks	1,650	550	2,200	
Instruments	150	50	200	
TOTAL MAJOR EQUIPMENT	1,800	1,300	3,100	
MINOR EQUIPMENT				
Excavation-Concrete	300	1,700	2,000	
Structures-Buildings				
Piping	1,050	1,050	2,100	
Electrical	100	200	300	
Insulation-Brickwork				
Painting	50	150	200	
TOTAL MINOR EQUIPMENT	1,500	3,100	4,600	
DIRECT COSTS	3,300	4,400	7,700	7,700.
CONTINGENCIES	300	500	800	800.
INDIRECT (CONTRACTOR'S) COSTS				
TOTAL ESTIMATED COST			TORRANCE SJ-0013195	$8,500.*

* COST BREAKDOWN

CAPITAL	$	4,900.00	(W.O.NO.)
PLANT CHANGE	$	2,200.00	(W.O.NO.)
EXT.MAINTENANCE	$		(W.O.NO.)
RETIREMENT	$	1,400.00	(W.O.NO.)

TMU 860-2 2-19-60

Design Description

for

Revision of Concentrated Brine Storage

Copolymer

Estimate No. 60-85R covers installation of 8,000 gallon wooden storage tank, moving 2 brine pumps in 4900 area and retiring 2 tanks and 4 pumps in Bldg. A-2 & A-3.

Installation in accordance with Flow Diagram SS-60-4543-1,

Plot Plan YT 5060 and/or Detailed Drawings - - -.

Estimate includes engineering, purchasing, expediting, inspection, fabrication, installation, ~~contractor's fees~~ and contingencies, - - -, - - -.

Estimated costs include Capital $4,900.00, Plant Change $2,200.00, Extraordinary Maintenance Expense - - -, Retirement Expense $1,400.00.

Engineering can be started 2 weeks after approval of AFE, using Shell (contract or Shell) engineering and Shell supervision.

Estimated job completion is 14 weeks after approval of AFE.

Longest delivery items are Tank at 6 weeks delivery.

Field installation by Shell & Contractor (Shell or Contractor).

Material purchase by Shell (Shell or Contractor).

Other pertinent factors affecting cost and/or completion.

TORRANCE
SJ-0013196

Date 9/21/60

Job Engineer D. R. Hayes

J. Levada

TMU-2636-1
2-18-59

Form 3039 (Rev. 3/52)
Printed in U.S.A.

INSPECTION REPORT

Equip. No. T-3011

ITEM L.M. Concentrated Brine Tank DATE Sept. 16, 1960

PLANT Copolymer SERVICE Brine Storage

COMMODITY HANDLED Brine

DATE INSPECTED 9/15/60 LAST INSPECTED 2/19/60 NEXT INSP. RECOMMENDED ---

REASON FOR SHUTDOWN Routine cleaning.

REMARKS Internal and External Ispection

Extensive delignification on vertical staves and tank bottom.

Corrosion apparent on all wrought iron hoops. Large deposits of oxidized salt formations beneath tank bottom, due to leakage, causing erosion of concrete pillars.

Delignification in progress externally also.

DISTRIBUTION
W. P. Probst
D. Frick
P. Konstan
Inspection Files

RECOMMENDATIONS:

Replace tank, repair flooring and concrete pillars. Coat floors and pillars with COROCRETE "A".

TORRANCE
SJ-0013197

Printed in U.S.A.

INSPECTED BY Robert Lopez

Rev. 3/52)
Printed in U S A

INSPECTION REPORT

Equip. No. T-4007 & T-3051

ITEM GH and JK Concentrated Brine DATE 3/1/60

PLANT Copolymer SERVICE Brine Storage

COMMODITY HANDLED Brine

DATE INSPECTED 2-19-60 LAST INSPECTED 9-2-50 NEXT INSP. RECOMMENDED 2-61

REASON FOR SHUTDOWN Cleaning

REMARKS Internal and External inspection

DISTRIBUTION
R.M.Stager
W.H.Probst
P.Konstan
Inspection files (2)

Delignification is very extensive in all vertical staves, particularly near the bottom.

The 2" supporting bank and 3/4" steel hoops are all corroding very rapidly due to seepage. These tanks are constructed of Tidwater Red Cypress The sides and bottom are very soft and spongy due to delignification of wood by the brine. These tanks have been in service since May, 1943.

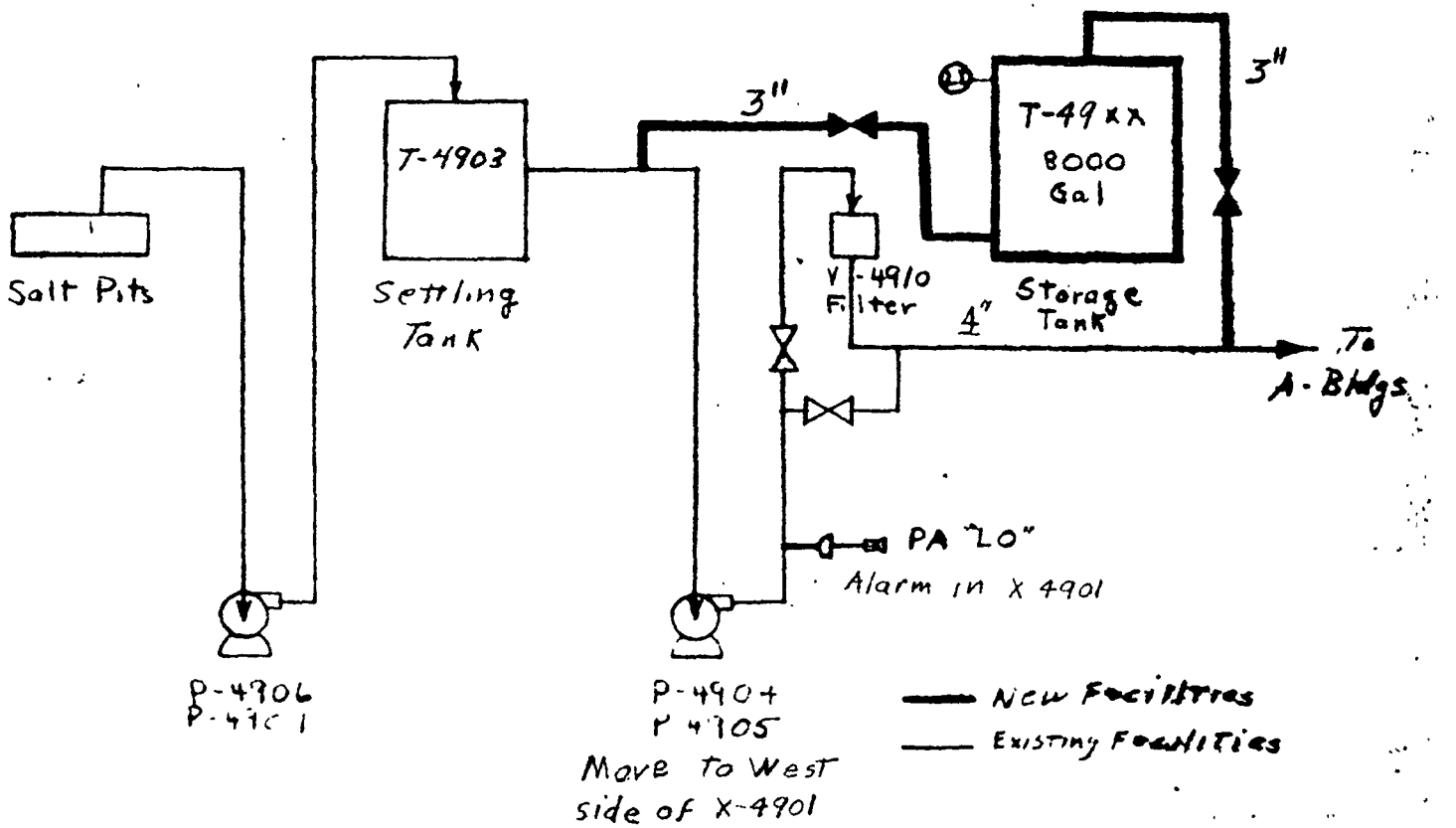
RECOMMENDATION

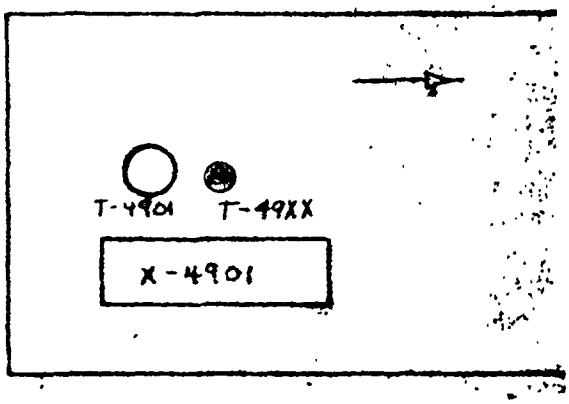
These tanks will require major repairs or replacement in six months.

TORRANCE
SJ-0013198

Printed in U.S.A.

INSPECTED BY ROBERT LOPEZ





Plot Plan

SHELL CHEMICAL CORPORATION
TORRANCE PLANT

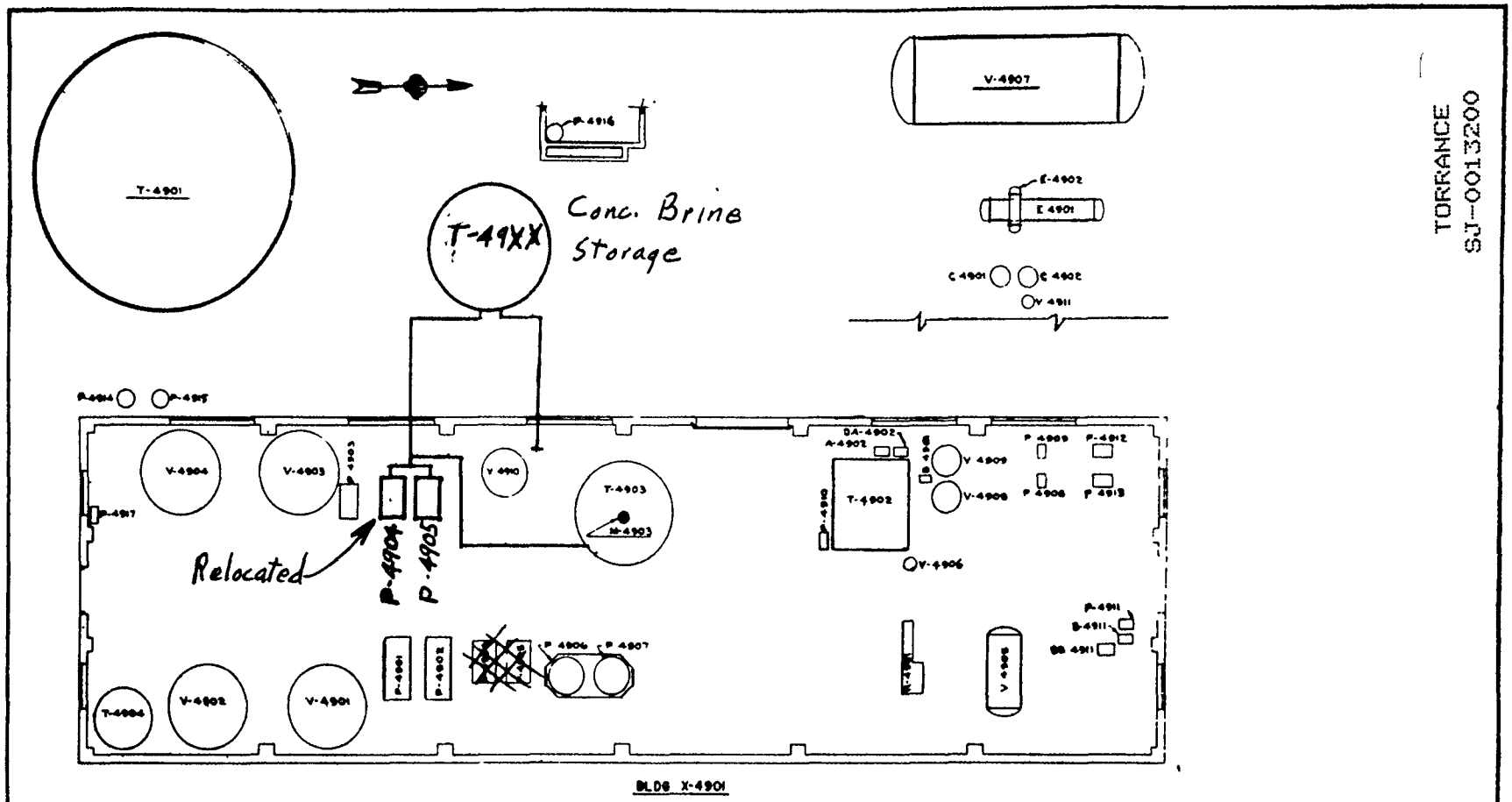
TORRANCE
SJ-0013199

JOB TITLE Brine Storage Tank Installation

DATE 3/29/60 DRAWN BY D DREW

JOB NUMBER Est. No 60-85R APPROVED BY WFP

SS 60-4543-1



BLDG X-4901

LIST OF EQUIPMENT

TANKS

T-4901	TREATED WATER STORAGE
T-4902	WET LINE FEEDER
T-4903	BRINE ACCELERATOR
T-4904	TREATED BRINE MEASURES

EXCHANGERS

E 4901	REBOILER
E-4902	GAS COOLER

VESSELS

V 4901	PER MUTIT WATER SOFTNER
V 4902	DITTO
V 4903	DITTO
V 4904	DITTO
V 4905	INERT GAS SURGE DRUM
V 4906	INERT GAS KNOCKOUT
V 4907	INERT GAS STORAGE
V 4908	ELECTRO DRYER
V 4909	DITTO
V 4910	FILTER
V 4911	INERT GAS ABSORBER KO DRUM

MIXERS

M 4903	BRINE ACCELERATOR MIXER

MIXER MOTORS

SM 4903	BRINE ACCELERATOR MIXER MTR

BLOWERS

B 4901	BLOWER FOR ELECTRO DRYER
B 4911	INTERT GAS MACH BLOWER

COLUMNS

C 4901	INERT GAS WATER SCRUBBER
C 4902	INERT GAS ABSORBER

PUMPS

P 4901	TREATED WATER PUMP
P 4902	DITTO
P 4903	SOFT WATER PUMP
P 4904	BRINE TREATER PUMP
P 4905	DITTO
P 4906	RAW BRINE
P 4907	DITTO
P 4908	CIRCULATOR WATER
P 4909	DITTO
P 4910	WET LINE TRANSFER PUMP
P 4911	OIL PUMP
P 4912	AMINE PUMP
P 4913	DITTO
P 4914	CONDENSATE PUMPS
P 4915	DITTO
P 4916	SUMP PUMP
P 4917	ACID PUMP

AUXILIARY EQUIPMENT

A-4902	CHEMICAL FEEDER

AUXILIARY DRIVE EQUIPMENT

DA-4902	CHEMICAL FEEDER MOTOR

BLOWER MOTORS

SB 4901	ELECTRO DRYER BLOWER MTR
SB 4911	INERT GAS MACH BLOWER MTR

COMPRESSORS

K 4901	INERT GAS COMP.

TORRANCE
SJ-0013200

COPOLYMER PLANT
EQUIPMENT LOCATIONS

YY-5060

To be attached to
Form No. TMU-288
for circulation

SHELL CHEMICAL COMPANY
TORRANCE PLANT

Est. No. 60-85 R

EQUIPMENT RETIREMENT ~~OR TRANSFER~~ REPORT
(Please indicate Retirement or Transfer)

DESCRIPTION 2,500 Gallon Wooden Tank

DPC NO. 336-A-1

PRESENT LOCATION AND SERVICE T-4007 Brine Tank

(1) PROPOSED DISPOSITION Scrap

REASON FOR RETIRING EQUIPMENT Recommended by Inspection Department.

(2) ESTIMATED DATE OF ORIGINAL INSTALLATION Apr. (Month) 55 (Year)

(2) ESTIMATED ORIGINAL COST: EQUIPMENT $ 372 (Shell)

LABOR $ —

ESTIMATED COST OF REMOVAL, DISMANTLING, ETC. $ 300.00

(3) ESTIMATED SALVAGE VALUE $ Nil

(3) APPROVAL OF SALVAGE VALUE BY STORES MGR. $ [signature]

D. R. Hayes 6/2/60
ORIGINATOR

RETIREMENT WORK ORDER ASSIGNED _____ DATE _____

NOTE:

(1) If a transfer, show new location and service. If a retirement, the Proposed Disposition and Estimated Salvage Value should be determined jointly by the Originator and the Stores Manager.

(2) Not required when DPC No. is shown.

A/c 85

(3) Required for Retirement but not for Transfers.

(4) Prepare and submit in quadruplicate.

TORRANCE
SJ-0013201

TMU-1029-5
HGL:vk 3-23-60

To be attached to
Form No. TMU-288
for circulation

SHELL CHEMICAL COMPANY
TORRANCE PLANT

Est. No. 60-85R

EQUIPMENT RETIREMENT ~~OR TRANSFER~~ REPORT
(Please indicate Retirement or Transfer)

DESCRIPTION 2500 Gallon Wooden Tank

DPC NO. 336 A-6

PRESENT LOCATION AND SERVICE T-3011 Brine Tank

(1) PROPOSED DISPOSITION Scrap

REASON FOR RETIRING EQUIPMENT Recommended by Inspection Dept.

(2) ESTIMATED DATE OF ORIGINAL INSTALLATION Apr (Month) 1953 (Year)

(2) ESTIMATED ORIGINAL COST: EQUIPMENT $ 127

LABOR $

ESTIMATED COST OF REMOVAL, DISMANTLING, ETC. $ 300.00

(3) ESTIMATED SALVAGE VALUE $ Nil

(3) APPROVAL OF SALVAGE VALUE BY STORES MGR. $ [signature]

D. R. Hayes 9/21/60
ORIGINATOR

RETIREMENT WORK ORDER ASSIGNED DATE

NOTE:

(1) If a transfer, show new location and service. If a retirement, the Proposed Disposition and Estimated Salvage Value should be determined jointly by the Originator and the Stores Manager.

(2) Not required when DPC No. is shown.

(3) Required for Retirement but not for Transfers.

(4) Prepare and submit in quadruplicate.

R/L85

TORRANCE
SJ-0013202

TMU-1029-5
HGL:vk 3-23-60

To be attached to
Form No. TMU-288
for circulation

SHELL CHEMICAL COMPANY
TORRANCE PLANT

Est. No. 60-85R

EQUIPMENT RETIREMENT ~~OR TRANSFER~~ REPORT
(Please indicate Retirement or Transfer)

DESCRIPTION 2,500 Gallon Wooden Tank

DPC NO. 336-A-5

PRESENT LOCATION AND SERVICE T-3051 Brine Tank.

(1) PROPOSED DISPOSITION Scrap

REASON FOR RETIRING EQUIPMENT Recommended by Inspection Department.

(2) ESTIMATED DATE OF ORIGINAL INSTALLATION Shell Apr (Month) 1955 (Year)

(2) ESTIMATED ORIGINAL COST: EQUIPMENT $ 353

LABOR $

ESTIMATED COST OF REMOVAL, DISMANTLING, ETC. $ 300.00

(3) ESTIMATED SALVAGE VALUE $ Nil

(3) APPROVAL OF SALVAGE VALUE BY STORES MGR. $

D. R. Hayes 6/2/60
ORIGINATOR

RETIREMENT WORK ORDER ASSIGNED DATE

NOTE:

(1) If a transfer, show new location and service. If a retirement, the Proposed Disposition and Estimated Salvage Value should be determined jointly by the Originator and the Stores Manager.

(2) Not required when DPC No. is shown.

(3) Required for Retirement but not for Transfers.

(4) Prepare and submit in quadruplicate.

a/c 85

TORRANCE
SJ-0013203

TMU-1029-5
HGL:vk 3-23-60